Mandatory Public Reporting of *Clostridium difficile* Infections in California General Acute Care Hospitals, April 2010 through March 2011

Presentation to the Healthcare Associated Infections Advisory Committee

November 17, 2011

Health and Safety Code 1288.55(a)(1)

- Each health facility shall quarterly report all cases of healthcare associated *Clostridium difficile* infection (CDI) and the number of inpatient days
- CDPH shall post on the department's website the incidence rate of CDI and the number of inpatient days

Data Sources

- April 1, 2010: all California licensed general acute care hospitals required to report CDI using the NHSN MDRO LabID module facility-wide
- October 5, 2011: accessed CDI data from NHSN reported April 1, 2010 through March 31, 2011

Quality Assurance and Control

- March and May 2011: distributed quality assurance and control reports
  - Identified missing, incomplete, or potentially aberrant data
  - Encouraged hospitals to investigate and resolve these data issues, as appropriate
- October 2011: sent email to all facilities with missing data (both numerator and denominator)
  - Notified hospitals of missing data in NHSN, indicated number of months with no data
  - Encouraged facilities to make final corrections and enter missing data before the final data download on October 24, 2011.
- All corrections were made by the facility in NHSN

Definitions

- **Hospital Onset (HO)**: LabID Event more than three days after admission to the facility (e.g. on or after day 4)
- **Community Onset Hospital Associated (CO-HA)**: LabID Event from pt within first 3 days of admission who was discharged from the facility within 4 weeks prior to current date of stool specimen collection
- **Hospital Associated (HA)**: sum of HO LabID Events and CO-HA LabID Events

Definitions cont'd

- LabID Event: proxy measure of infection, exposure, or healthcare acquisition
- CDI positive lab event: positive result for laboratory assay for C. difficile toxin A and/or B or a toxin-producing C. difficile organism detected in stool by culture or other laboratory means
  - Other laboratory means (i.e. PCR) vary in sensitivity and specificity; CDPH has no means to control for type of laboratory testing methodology

More Definitions

- Case Mix Index (CMI): a measure of the severity of illness in hospital patient populations, published by the California Office of Statewide Health Planning and Development (OSHPD) for fiscal year 2008/2009

- **Long-term Acute Care (LTAC)** facilities: licensed general acute care hospitals providing care for patients with medically complex conditions requiring an average length of stay for all patients of greater than 25 days. California LTAC hospitals were identified through CMS and assessments by HAI Program staff

Analyses

HO Incidence Rate =

Number of HO LabID Events x 10,000

Total patient days

HO Incidence Rate =

Number of HA LabID Events x 10,000

Total patient days

Analyses cont'd

- Pooled mean = sum of all CDI HO or HA cases divided by sum of all patient days
- For each rate we calculated exact 95% confidence intervals using the Poisson distribution.

Table 1: Hospitals Reporting Less Than 10 Months

Hospital Name	Months Reported	Hospital Onset Cases	Hospital Associated Cases	Patient Days

Tables 2 and 3: LTAC and General Acute Care Hospitals Reporting 10 or More Months

Hospital Name	Cases HO	Patient Days	HO Rate	95% CI	Cases HA	HA Rate	95% CI	CMI

HO: Hospital Onset
HA: Hospital Associated
CI: Confidence Interval
CMI: Case Mix Index

California Department of PublicHealth

Limitations

- Rates are not risk adjusted
  - Laboratory testing methodology not available in NHSN
  - Data on patient population, such as patient's age and community onset prevalence, not available
- Hospital-specific rates should not be compared
- NHSN risk adjustment method using type of laboratory test, community onset rates, and other risk factors may be available in 2012

Conclusion

- Hospitals: include lab testing method in NHSN annual survey
- Hospitals: implement CDI prevention measures
- Consumers: find out prevention measures in place at their hospital
- Consumers: actions they can take to prevent CDI

California Department of PublicHealth

Conclusion

- First step toward obtaining data to develop appropriate risk adjustment methods for *C. difficile* infection
  - Compare hospitals within California and at the national level